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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/015,704  | 12/17/2001  | Tatsuya Andoh        | 217050US0XCONT      | 8084             |
| 22850   | 7590        | 08/12/2005           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | HUG, ERIC J         |                  |
|   |             | ART UNIT             |                     | PAPER NUMBER     |
|   |             |                      |                     | 1731             |

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/015,704             | ANDOH ET AL.        |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Eric Hug               | 1731                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 25 May 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 9,10,13,15-24,27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 9,10,13,15-24,27 and 29-34 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

***Response to Amendment***

The following is in response to the amendment filed on May 25, 2005.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 9, 10, 15-21, 23 and 24 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-189153 in view of Holton (US 4,012,280).

JP 07-189153 teaches an alkaline cooking method using liquor containing polysulfides and anthraquinone anthracene or hydroanthraquinone compounds, with 13-25% weight active alkali and 10-30% sulfidity. The Examples use "DDAN" as the anthraquinone compound which is 1,4 dihydro 9,10 anthraquinone, which has an EA=0.154 V. JP 07-189153 also teaches using 1-ethyl and 2-methyl anthraquinone compounds. If the exact anthraquinone claimed is not taught by JP 07-189153 then similar derivatives of anthraquinone, hydroanthraquinone and anthracene would have been obvious to the routineer as their alternativeness as digesting assistants is taught by JP 07-189153. See JP 07-189153 translation, page 5, [0031] for sodium sulfide concentration of 12.0 g/L calculated as Na<sub>2</sub>O and a polysulfide concentration of 5.9 g/L. See paragraph [0015] liquid to wood ratios that read on the claimed range. See paragraph [0019] for concentrations of hydroquinone compound based on chip weight that read on the claimed range. The only apparent difference between the process of JP 07-189153 and the claimed invention is the recitation of the polysulfide sulfur concentration being at least about 8 g/L.

However, it is felt that the concentration of polysulfide disclosed in JP 07-189153 is not limited to 5.6 g/L. In any event, the optimization of the polysulfide concentration in the cooking process of JP 07-189153 away from 5.6 g/L would have been obvious to one skilled in the art based on the cooking conditions, wood type, and choice of hydroquinone compound. Holton is cited here to further exemplify the use of hydroquinone compounds in alkaline cooking liquors containing sodium sulfide and polysulfide, and further exemplifies the desirability of increased levels of polysulfide in such alkaline cooking liquors. Holton particularly discloses improved yields using excess levels of polysulfide in conjunction with the hydroquinone compounds.

2. Claims 13, 22, 27 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-189153 as applied to claim 9 above, and further in view of WO 97/41295 or ADMITTED PRIOR ART (specification, page 12, 4-14). WO 97/41295 or the ADMITTED PRIOR ART teaches producing polysulfide-pulping liquor by subjecting alkaline liquor, e.g. white liquor, to electrolytic oxidation. It would have been obvious to the routineer to produce the polysulfide liquor of JP 07-189153 by the known method of electrolytic oxidizing alkaline liquor, e.g. white liquor, taught by WO 97/41295.

***Response to Arguments***

Applicant's arguments filed May 25, 2005 have been fully considered.

The anticipatory rejection under 102(b) set forth previously has been withdrawn.

The use of Stigsson as a supporting reference has been withdrawn. Applicant has pointed out that in Stigsson, the liquor containing more than 10 g/L of polysulfide is not the cooking liquor but is a liquor produced by way of regenerating the polysulfide after the cooking process. It is noted, however, that a portion of the liquor containing 10 g/L polysulfide is used to stabilize the polysulfide concentration of the cooking liquor, which is disclosed in Stigsson as being 5 g/L or greater (see US 6,143,130, column 12, first paragraph). It is felt that this does not contribute additionally to the JP 07-189153 reference.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bourson et al (US 4,235,666)

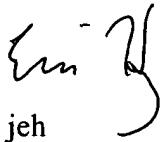
Wada et al (US 4,473,439)

Each teach the use of hydroquinone compounds in sulfide-containing cooking liquors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 571 272-1192. The examiner can normally be reached on Monday through Friday, 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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